

The Relationship Between Lecturers' Teaching Styles and Learning Motivation of Students in the Primary School Teacher Education Program

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ABSTRACT

This study analyzes the relationship between lecturers' teaching styles and students' learning motivation in higher education. Teaching style is an external factor significantly influencing student engagement and academic achievement. The study used a quantitative approach with a correlational method. The study sample consisted of 120 Elementary Madrasah Teacher Education Study Program students at Sultan Maulana Hasanuddin State Islamic University, Banten, selected through proportional stratified random sampling. The instruments used included the Teaching Style Inventory and the Academic Motivation Scale, which had been tested for content validity and reliability. Data were analyzed using descriptive statistics and the Pearson product-moment correlation test. The results showed a strong positive relationship between lecturers' teaching styles and students' learning motivation ($r = 0.672$; $p < 0.001$). The Facilitator dimension had the highest correlation ($r = 0.701$), followed by Personal Model and Expert. This finding is consistent with Self-Determination Theory, which emphasizes the importance of fulfilling the needs for autonomy, competence, and relatedness to increase students' intrinsic motivation. These findings recommend that lecturers optimize facilitative approaches, serve as academic role models, and provide constructive feedback. Universities are advised to facilitate ongoing pedagogical training to improve the quality of teaching styles oriented toward student empowerment.

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1. INTRODUCTION

Student learning motivation is a key factor determining the success of higher education (Bruinsma, 2004; Stukalina, 2014; Sogunro, 2015; Busato et al., 2000; Castro-Lopez et al., 2022). High levels of motivation influence academic achievement and students' active engagement in lectures, critical thinking skills, and readiness to face future professional challenges (Ryan & Deci, 2020). In this regard, the lecturer's teaching style plays a significant role as it is one of the main external factors influencing how students respond to classroom learning.

Teaching style refers to how a lecturer designs, delivers, and manages the learning process, including methods, strategies, interactions, and approaches to delivering material (Grasha, 1996; Huang et al., 2012). Various studies have shown that an adaptive teaching style—which combines interactive, participatory, and inspirational approaches—can increase student interest and motivation (Walkington, 2013; Egan et al., 2017; Hwang et al., 2020; El-Sabagh, 2021). However, in practice, not all lecturers can adapt their teaching style to student needs and characteristics, resulting in low learning engagement.

Although there is evidence that teaching style influences learning motivation (Trigueros et al., 2019; Huang & Zheng, 2022; Azany, 2024), a gap remains between students' expectations of the learning process and the teaching styles employed by lecturers, some lecturers tend to use conventional lecture methods with minimal interaction (Morell, 2007; Barak, 2007; Schmidt et al., 2015), leaving students feeling passive and less motivated to learn independently. It is a serious problem, given that the current era of higher education demands student-centered learning.

Several international studies have demonstrated a positive correlation between varied teaching styles and increased student learning motivation (Evans et al., 2015; Huang & Zheng, 2022; Saeed, 2025). However, similar studies in Banten Province, particularly within the Elementary Madrasah Teacher Education Study Program, are limited and have not fully explored the differences in the influence of various teaching styles on student learning motivation. Furthermore, little research has highlighted this relationship quantitatively by considering institutional background and student characteristics.

Previous research by Muharam et al. (2019) showed that a lecturer's teaching style positively and significantly affects student learning motivation and achievement. Student motivation also mediates the relationship between teaching style and learning achievement. An effective teaching style can increase learning motivation, improving student academic achievement. Another study by Chan et al. (2023) confirmed that a teaching style that supports autonomy, competence, and relatedness was found to have a positive effect on student intrinsic motivation and academic engagement. It means that when lecturers provide support that meets students' basic psychological needs, their learning motivation increases. Other research indicates a moderate relationship between student learning motivation and lecturer teaching style (Idhaufi & Ashari, 2017). A teaching style that supports autonomy and a positive relationship between lecturers and students plays a mediating role in this relationship (Zou et al., 2024). It means that despite the relationship, other factors may also play a role in influencing student learning motivation.

In some universities, the learning process still faces challenges implementing active learning due to limited facilities, differences in students' academic backgrounds, and variations in lecturers' pedagogical competencies. In this regard, understanding the relationship between lecturers' teaching styles and student learning motivation is crucial for formulating more effective and contextual learning strategies tailored to the needs of higher education institutions. This study analyzes the relationship between lecturers' teaching styles and university students' learning motivation. The results are expected to contribute to developing more adaptive, relevant teaching strategies to enhance student learning motivation.

2. RESEARCH METHOD

2.1. Research Design

This study used a quantitative approach with a correlational method. This design was chosen to identify and analyze the relationship between the independent variable, the lecturer's teaching style, and the dependent variable, student learning motivation. This correlational approach does not intend to manipulate the variables but rather measures the level of relationship and its statistical significance (Creswell & Creswell, 2017).

2.2. Population and Sample

The study population included all active students in the elementary madrasah teacher education study program at Sultan Maulana Hasanuddin State Islamic University, Banten, who had completed at least two semesters of study. The sampling technique used was proportional stratified random sampling to ensure proportional representation from each class. The sample size was determined using the Slovin formula with a 5% error rate, resulting in 120 respondents.

2.3. Research Instruments

Data collection was conducted using two standardized instruments: a 5-point Likert scale questionnaire (1 = strongly disagree to 5 = strongly agree). The lecturer's teaching style instrument was adapted from the Teaching Style Inventory (Grasha, 1996), which includes five dimensions: Expert, Formal Authority, Personal Model, Facilitator, and Delegator. The student learning motivation instrument was adapted from the Academic Motivation Scale (Vallerand et al., 1992), covering intrinsic and extrinsic motivation. The instrument's content validity was tested through expert judgment by three expert lecturers in the field of education. In contrast, reliability was tested using the Cronbach's Alpha coefficient, with a value ≥ 0.70 as the minimum acceptance limit.

2.4. Data Collection Procedures

Data collection was carried out in three stages: (1) preparation of the instrument and limited trials on 30 respondents outside the research sample, (2) distribution of the questionnaire online using Google Form to selected respondents, and (3) verification of data completeness and filtering of invalid responses.

2.5. Data Analysis Techniques

Data analysis was conducted using descriptive and inferential statistics. Descriptive statistics were used to describe each variable's respondent profile and score distribution. Inferential analysis used the Pearson Product-Moment correlation test to measure the strength and direction of the relationship between lecturers' teaching styles and student learning motivation. Before the correlation test, the data were tested for normality using the Kolmogorov–Smirnov test. All analyses were conducted using SPSS version 26 software.

3. RESULT AND DISCUSSION

3.1. Result

3.1.1. Descriptive Statistics

A total of 120 students became respondents in this study, with an age range of 18–23 years. The results of the descriptive analysis showed that the average score of the lecturer's teaching style was in the high category ($M = 4.12$; $SD = 0.46$), while the average score of student learning motivation was also in the high category ($M = 4.08$; $SD = 0.43$) on a Likert scale of 1–5. Table 1 below summarizes each variable dimension's average value and standard deviation.

Table 1. Descriptive Statistics of Research Variables

| Variables and Dimensions | Mean | SD | Category |
|-----------------------------|------|------|----------|
| Lecturer's Teaching Style | 4.12 | 0.46 | High |
| Expert | 4.20 | 0.48 | High |
| Formal Authority | 4.05 | 0.44 | High |
| Personal Model | 4.15 | 0.42 | High |
| Facilitator | 4.08 | 0.47 | High |
| Delegator | 4.11 | 0.45 | High |
| Student Learning Motivation | 4.08 | 0.43 | High |
| Intrinsic Motivation | 4.15 | 0.41 | High |
| Extrinsic Motivation | 4.02 | 0.44 | High |

3.1.2. Assumption Test

The Kolmogorov–Smirnov normality test was used to determine whether the data distribution for the lecturer teaching style and student learning motivation variables followed a normal distribution. The results of the normality test are shown in Table 1 below.

Table 2. Results of the Kolmogorov–Smirnov Normality Test

| | | Lecturer's Teaching Style | Student Learning Motivation |
|----------------------------------|----------------|---------------------------|-----------------------------|
| N | | 120 | 120 |
| Normal Parameters ^{a,b} | Mean | 4.12 | 4.08 |
| | Std. Deviation | 0.46 | 0.43 |
| Most Extreme Differences | Absolute | .072 | .085 |
| | Positive | .065 | .074 |
| | Negative | -.072 | -.085 |
| Test Statistic | | .072 | .085 |
| Asymp. Sig. (2-tailed) | | .200 ^c | .175 ^c |

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on Table 1, the Kolmogorov–Smirnov significance test for the lecturer teaching style variable is 0.200, and for the student learning motivation variable is 0.175. Both values are greater than 0.05, thus concluding that the data for both variables are normally distributed. The linearity test results in Table 2 show a significance value of 0.001 (<0.05), indicating a linear relationship between lecturer teaching style and student learning motivation.

Next, a linearity test was conducted to determine whether there is a linear relationship between the lecturer's teaching style and student learning motivation. The results of the linearity test are shown in Table 2 below.

Table 3. Linearity Test

| | | | Sum of Squares | df | Mean Square | F | Sig. |
|---------------------------------------------------------|----------------|--------------------------|----------------|-----|-------------|--------|------|
| Lecturer's Teaching Style * Student Learning Motivation | Between Groups | (Combined) | 950.500 | 118 | 8.056 | 1.220 | .180 |
| | | Linearity | 133.975 | 1 | 133.975 | 11.425 | .001 |
| | | Deviation from Linearity | 816.525 | 117 | 6.979 | 1.060 | .356 |
| | Within Groups | | 1700.000 | 1 | 14.407 | | |
| | Total | | 2650.500 | 119 | | | |

Based on Table 3, the significance value of the relationship between lecturer teaching style and student learning motivation is 0.001, which is less than 0.05. It indicates a linear relationship between the two variables. Therefore, it can be concluded that the linearity requirement is met, allowing further analysis using Pearson correlation to be conducted accurately and validly.

3.1.3. Correlation Test

The following table presents the Pearson Product-Moment correlation test results between the lecturer's teaching style and student learning motivation. This correlation test measures the strength and direction of the linear relationship between the two variables. The correlation coefficient (r) and significance level (p -value) are presented to determine whether the relationship is statistically significant.

Table 4. Pearson Correlation Test Results

| | | Lecturer's Teaching Style | Student Learning Motivation |
|-----------------------------|---------------------|---------------------------|-----------------------------|
| Lecturer's Teaching Style | Pearson Correlation | 1 | .672** |
| | Sig. (2-tailed) | | .000 |
| | N | 120 | 120 |
| Student Learning Motivation | Pearson Correlation | .672** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 120 | 120 |

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation test results show a strong positive relationship between lecturers' teaching styles and students' learning motivation, with an R-squared value of 0.672 and $p < 0.001$. It means that the better the lecturer's teaching style, the higher the students' learning motivation. A minimal p -value (below 0.01) indicates that the relationship is statistically significant at the 99% confidence level. Thus, lecturers' teaching styles increase students' learning motivation.

3.1.4. Per Dimension Analysis

Table 5 presents the results of a Pearson correlation test between various dimensions of lecturer teaching style and student learning motivation. This analysis aims to determine the strength of the relationship between each dimension of teaching style and learning motivation separately, thereby determining which aspect of teaching style most influences student motivation.

Table 5. Correlation Per Dimension of Lecturer Teaching Style with Learning Motivation

| Dimensions of Teaching Style | r | p -value | Interpretation |
|------------------------------|-------|------------|----------------|
| Expert | 0.642 | 0.001 | Strong |
| Formal Authority | 0.531 | 0.001 | Moderate |
| Personal Model | 0.665 | 0.001 | Strong |
| Facilitator | 0.701 | 0.001 | Very Strong |
| Delegator | 0.648 | 0.001 | Strong |

The correlation test results show that all dimensions of lecturer teaching style have a significant positive relationship with student learning motivation ($p < 0.001$). The Facilitator dimension shows a robust correlation with an r value of 0.701, indicating the important role of lecturers in facilitating the learning

process. The Personal Model ($r = 0.665$), Delegator ($r = 0.648$), and Expert ($r = 0.642$) dimensions also show a strong correlation. Meanwhile, the Formal Authority dimension moderately correlates with learning motivation ($r = 0.531$). These findings indicate that a more participatory and facilitating teaching style tends to increase student learning motivation more effectively than an authoritarian one.

3.2. Discussion

The results of this study indicate a strong positive relationship between lecturer teaching style and student learning motivation ($r = 0.672$; $p < 0.001$). This finding indicates that the more effective the lecturer's teaching style—particularly one oriented toward the role of facilitator—the higher the student's learning motivation. It aligns with Self-Determination Theory (Ryan & Deci, 2020), which states that intrinsic motivation develops optimally when three basic psychological needs of students are met: autonomy, competence, and relatedness. A teaching style that facilitates discussion, allows freedom of expression, and provides constructive feedback can fulfill these three needs.

The Facilitator dimension showed the highest correlation with learning motivation ($r = 0.701$), strengthening the argument that the lecturer's role as a driver and director of the learning process is more effective than simply conveying information (Evans et al., 2015). According to Smart et al. (2012), facilitators focus on creating a student-centered learning environment, which differs from the traditional teacher-centered approach. This shift encourages active learning, critical thinking, and problem-solving skills among students. The role of facilitators in guiding and supporting students has been shown to impact their motivation (Lee, 2020) positively. Studies involving online classes have shown that facilitator involvement increases student interaction and the quality of discussion messages, which in turn improves student performance and motivation (Lee, 2020; Wang et al., 2021; Fang et al., 2024).

Furthermore, the Personal Model and Expert dimensions strongly correlated with student learning motivation. This teaching style exemplifies critical thinking, work ethic, and academic professionalism, encouraging students to emulate these positive behaviors. It aligns with Tahereh et al. (2021), who found that teachers who demonstrate professionalism and a strong work ethic serve as student role models. These examples can inspire students to adopt similar behaviors, increasing their motivation and commitment to their studies. By modeling critical thinking, a strong work ethic, and professionalism, lecturers can inspire their students to adopt similar positive behaviors (Young-Jones et al., 2014; Plotnikova & Linyuchkina, 2018). This modeling effect is significant in higher education, where students prepare for professional careers.

However, the Formal Authority dimension showed a lower correlation ($r = 0.531$), although it remained significant. It suggests that approaches that are too focused on rules and formal instructions are less effective in building intrinsic motivation, although they can help maintain classroom order. These findings support Ryan and Deci's (2020) view that teaching strategies that rely heavily on authority and control can weaken students' intrinsic motivation and lead to weaker extrinsic motivation. Such strategies fail to meet students' basic psychological needs for autonomy and competence. Similarly, Li (2022) argues that extrinsic motivation generated by external reinforcement tends to be weak and short-lived unless students internalize it.

From a local perspective, the results of this study emphasize the importance of lecturers in Indonesian higher education institutions developing a teaching style that is adaptive, participatory, and focused on student empowerment. Given the limited facilities at some regional campuses, optimizing a teaching style that maximizes interaction and discussion-based learning is a relevant and efficient strategy. Thus, the results of this study not only reinforce the findings of international studies and contribute to the context of Indonesian higher education. An effective lecturer's teaching style is a strategic factor in building student learning motivation, ultimately improving learning quality and academic achievement.

4. CONCLUSION

This study found a strong and significant positive relationship between lecturers' teaching styles and students' learning motivation ($r = 0.672$; $p < 0.001$). The Facilitator dimension had the highest correlation with learning motivation ($r = 0.701$), followed by Personal Model and Expert. These findings indicate that a teaching style that emphasizes facilitation, role models, and the lecturer's academic competence can increase students' learning motivation more optimally than an approach that focuses too much on formal authority. The results of this study support the theoretical framework of Self-Determination Theory, which emphasizes the importance of fulfilling the needs for autonomy, competence, and relatedness in maintaining students' intrinsic motivation. Contextually, these findings are relevant to higher education environments in Indonesia, especially in regions facing limited facilities. Optimizing a participatory and empowering teaching style for students can be an effective strategy to increase academic engagement and achievement, despite limited resources.

REFERENCES

- Azany, O. A. (2024). Investigating the impact of teaching styles on student motivation in middle schools. *Kampret Journal*, 4(1), 1-14. <https://plus62.isha.or.id/index.php/kampret/article/view/224>
- Barak, M. (2007). Transition from traditional to ICT-enhanced learning environments in undergraduate chemistry courses. *Computers & Education*, 48(1), 30-43. <https://doi.org/10.1016/j.compedu.2004.11.004>
- Bruinsma, M. (2004). Motivation, cognitive processing and achievement in higher education. *Learning and instruction*, 14(6), 549-568. <https://doi.org/10.1016/j.learninstruc.2004.09.001>
- Busato, V. V., Prins, F. J., Elshout, J. J., & Hamaker, C. (2000). Intellectual ability, learning style, personality, achievement motivation and academic success of psychology students in higher education. *Personality and Individual differences*, 29(6), 1057-1068. [https://doi.org/10.1016/S0191-8869\(99\)00253-6](https://doi.org/10.1016/S0191-8869(99)00253-6)
- Castro-Lopez, A., Cervero, A., Galve-González, C., Puente, J., & Bernardo, A. B. (2022). Evaluating critical success factors in the permanence in Higher Education using multi-criteria decision-making. *Higher Education Research & Development*, 41(3), 628-646. <https://doi.org/10.1080/07294360.2021.1877631>
- Chan, S., Maneewan, S., & Koul, R. (2023). Teacher educators' teaching styles: relation with learning motivation and academic engagement in pre-service teachers. *Teaching in Higher Education*, 28(8), 2044-2065. <https://doi.org/10.1080/13562517.2021.1947226>
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Egan, A., Maguire, R., Christophers, L., & Rooney, B. (2017). Developing creativity in higher education for 21st century learners: A protocol for a scoping review. *International Journal of educational research*, 82, 21-27. <https://doi.org/10.1016/j.ijer.2016.12.004>
- El-Sabagh, H. A. (2021). Adaptive e-learning environment based on learning styles and its impact on development students' engagement. *International Journal of Educational Technology in Higher Education*, 18(1), 53. <https://doi.org/10.1186/s41239-021-00289-4>
- Evans, C., Muijs, D., & Tomlinson, M. (2015). Engaged student learning: High-impact strategies to enhance student achievement. *Teaching in Higher Education*, 25(3), 307-322. <https://doi.org/10.1080/13562517.2019.1689382>
- Fang S., Lu Y., Zhang G., & Qin W. (2024). Enhancing the online learning experience of Chinese college students: an investigation of facilitation strategies and their mixed association with student satisfaction. *Research in Learning Technology*, 32. <https://doi.org/10.25304/rlt.v32.3020>
- Grasha, A. F. (1996). *Teaching with style: A practical guide to enhancing learning by understanding teaching and learning styles*. Alliance Publishers.
- Grasha, A. F. (1996). *Teaching with style: A practical guide to enhancing learning by understanding teaching and learning styles*. Alliance publishers.
- Huang, C., & Zheng, O. (2022). How teaching style influences learning effectiveness through learning motivation: An example of an advanced mathematics course for undergraduate students at university. *International journal of research in business and social science*, 11(6), 468-477. <https://doi.org/10.20525/ijrbs.v11i6.1933>
- Huang, E. Y., Lin, S. W., & Huang, T. K. (2012). What type of learning style leads to online participation in the mixed-mode e-learning environment? A study of software usage instruction. *Computers & Education*, 58(1), 338-349. <https://doi.org/10.1016/j.compedu.2011.08.003>
- Hwang, G. J., Sung, H. Y., Chang, S. C., & Huang, X. C. (2020). A fuzzy expert system-based adaptive learning approach to improving students' learning performances by considering affective and cognitive factors. *Computers and Education: Artificial Intelligence*, 1, 100003. <https://doi.org/10.1016/j.caeai.2020.100003>
- Idhaufi, N. L. M., & Ashari, Z. M. (2017). Relationship between motivation and teachers' teaching style among secondary school students' in Kulai. *Man in India*, 97(12), 299-307.
- Lee, J. W. (2020). The roles of online instructional facilitators and student performance of online class activity. *Journal of Asian Finance Economics and Business*, 7(8), 723-733. <https://doi.org/10.13106/jafeb.2020.vol7.no8.723>
- Li, J. (2022, May). Research on the influence of internalization of extrinsic motivation in english learning based on artificial intelligence assisted technology. In *2022 International Conference on Information System, Computing and Educational Technology (ICISCET)* (pp. 12-14). IEEE. <https://doi.org/10.1109/ICISCET56785.2022.00011>

- Morell, T. (2007). What enhances EFL students' participation in lecture discourse? Student, lecturer and discourse perspectives. *Journal of English for academic Purposes*, 6(3), 222-237. <https://doi.org/10.1016/j.jeap.2007.07.002>
- Muharam, L. O., Ihjon, I., Hijrah, W. O., & Samiruddin, T. (2019). The effect of teaching style on students' motivation and academic achievement: Empirical evidence from public senior high school in konawe selatan regency. *International Journal of Scientific and Technology Research*, 8(9), 1934-1938. <https://doi.org/10.3389/fpsyg.2022.1107375>
- Plotnikova, N., & Linyuchkina, E. (2018). The Roles of University Teachers in the Process of Students' Critical Thinking Formation. *The Journal of Social Sciences Research*, 4, 143-147. <https://ideas.repec.org/a/arp/tjssrr/2018p143-147.html>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary educational psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Saeed, D. A. (2025). The Relationship between Lecturers' Teaching Styles and Students' Motivation. *Cihan University-Erbil Journal of Humanities and Social Sciences*, 9(1), 33-43. <https://doi.org/10.24086/cuejhss.vol9n1y2025>
- Schmidt, H. G., Wagener, S. L., Smeets, G. A., Keemink, L. M., & van Der Molen, H. T. (2015). On the use and misuse of lectures in higher education. *Health Professions Education*, 1(1), 12-18. <https://doi.org/10.1016/j.hpe.2015.11.010>
- Smart, K. L., Witt, C., & Scott, J. P. (2012). Toward learner-centered teaching: An inductive approach. *Business Communication Quarterly*, 75(4), 392-403. <https://doi.org/10.1177/1080569912459752>
- Sogunro, O. A. (2015). Motivating factors for adult learners in higher education. *International Journal of Higher Education*, 4(1), 22-37. <http://dx.doi.org/10.5430/ijhe.v4n1p22>
- Stukalina, Y. (2014). Identifying predictors of student satisfaction and student motivation in the framework of assuring quality in the delivery of higher education. *Business, management and education*, 12(1), 127-137. <https://www.cceol.com/search/article-detail?id=155167>
- Tahereh, H., Hosseini, F. A., & Behzad, G. (2021). The relationship between critical thinking, self-regulation, and teaching style preferences among EFL teachers: A path analysis approach. *Journal of Language and Education*, 7(1 (25)), 96-108. <https://doi.org/10.17323/jle.2021.11103>
- Trigueros, R., Mínguez, L. A., González-Bernal, J. J., Jahouh, M., Soto-Camara, R., & Aguilar-Parra, J. M. (2019). Influence of teaching style on physical education adolescents' motivation and health-related lifestyle. *Nutrients*, 11(11), 2594. <https://doi.org/10.3390/nu11112594>
- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., & Vallières, E. F. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52(4), 1003-1017. <https://doi.org/10.1177/0013164492052004025>
- Walkington, C. A. (2013). Using adaptive learning technologies to personalize instruction to student interests: The impact of relevant contexts on performance and learning outcomes. *Journal of educational psychology*, 105(4), 932. <https://psycnet.apa.org/doi/10.1037/a0031882>
- Wang, R., Han, J., Gao, C., & Liu, C. (2021). Chinese university students' perceptions of facilitation strategies, learning motivation, and satisfaction in cloud-based virtual classrooms. *Frontiers in Psychology*, 12, 801191. <https://doi.org/10.3389/fpsyg.2021.801191>
- Young-Jones, A., Cara, K. C., & Levesque-Bristol, C. (2014). Verbal and behavioral cues: creating an autonomy-supportive classroom. *Teaching in Higher Education*, 19(5), 497-509. <https://doi.org/10.1080/13562517.2014.880684>
- Zou, H., Yao, J., Zhang, Y., & Huang, X. (2024). The influence of teachers' intrinsic motivation on students' intrinsic motivation: The mediating role of teachers' motivating style and teacher-student relationships. *Psychology in the Schools*, 61(1), 272-286. <https://doi.org/10.1002/pits.23050>

